

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mark Goldstein on 3/12/10.

Please amend the claims as follows:

1. (Currently Amended) A method for increasing the throughput of network communications performed by a network access provider server, the method comprising:

- the network access provider server establishing a connection with a client computer

- the network access provider server receiving a request for a requested object from a requester, wherein the requester is a web browser on the client computer

- the network access provider server forwarding the request to a server

- the network access provider server receiving a response from the server

- the network access provider server reviewing the response to determine whether the response includes a native expiration

- when the response does not include the native expiration

the network access provider server computing a computed expiration for the response

the network access provider server inserting the computed expiration into the response creating an amended response

the network access provider server forwarding the amended response to the requester, wherein the amended response includes the requested object storing the amended response

the network access provider server providing the amended response to other requesters at other client computers that request the requested object, the providing achieved without additional communication with the server

the network access provider server evaluating whether the response includes a modification history

when the response includes the modification history,

the network access provider server computing a time-to-live for the response based on an age factor, a current time and a value of the modification history,

the network access provider server computing the computed expiration based on the current time and the time-to-live

when the response does not include the modification history, the network access provider server retrieving a modification query value from the request history data based on a response type and a response location

when the modification query value is retrieved,

the network access provider server computing the time-to-live for the response based on an age factor, a current time and the modification query value,

the network access provider server computing the computed expiration based on the current time and the time-to-live;  
when the retrieving the modification query value is not successful, the network access provider server forwarding the response to the requester.

2. (Previously Presented) The method of claim 1 wherein the server comprises an origin server.

4. (Previously Presented) The method of claim 1 wherein when the response includes the native expiration, the network access provider server forwarding the response to the requester.

5. (Previously Presented) The method of claim 1 wherein the computed expiration is based on at least one of a response content type and a response resource identifier.

6. (Previously Presented) The method of claim 1 wherein the computed expiration is based on a time-to- live.

7. (Currently Amended) The method of claim 1 further comprising;

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the network access provider server evaluating whether a content type of the response is appropriate;

the network access provider server performing the reviewing only when the content type of the response is appropriate.

8. (Previously Presented) The method of claim 7 wherein the network access provider server evaluating whether a content type of the response is appropriate comprises the network access provider server checking to determine whether the content type is in an appropriate type list.

9. (Previously Presented) The method of claim 8 wherein the appropriate type list comprises at least one of graphic, JavaScript, Cascading Style Sheet, portable document format (PDF), executable program, audio, video, and multimedia.

10. (Previously Presented) The method of claim 1 wherein the network access provider server receiving a request comprises the network access provider server storing request information as request history data.

11. (Previously Presented) The method of claim 10 wherein the request information includes a request resource identifier, a request content type, and a modification query when the modification query is present.

13. (Currently Amended) The method of claim ~~42~~10 further comprising:

when the time-to-live is greater than a defined maximum, the network access provider server setting the time-to-live to be the defined maximum;

when the time-to-live is less than a defined minimum, forwarding the response to the requester.

14. (Previously Presented) The method of claim 13 wherein the request is a hyper-text transfer protocol (HTTP) get, the modification query value is an HTTP if-modified-since value, and the modification history value is an HTTP last-modified value.

15. (Currently Amended) A method for increasing the throughput of network communications performed by a the network access provider server, the method comprising:

the network access provider server establishing a connection with a client computer

the network access provider server receiving a request for a requested object from a requester, wherein the requester is a web browser on the client computer

the network access provider server forwarding the request to a server

the network access provider server receiving a response from the server

the network access provider server evaluating whether the response has a status code that is actionable

when the status code is actionable,

the network access provider server reviewing the response to determine whether the response includes a native expiration

when the response does not include the native expiration

the network access provider server calculating a calculated expiration for the response

the network access provider server inserting the calculated expiration into the response creating an amended response

the network access provider server forwarding the amended response to the requester, wherein the amended response includes the requested object

the network access provider server storing the amended response

the network access provider server providing the amended response to other requesters on other client computers that request the requested object, the providing achieved without additional communication with the server

when the response includes the native expiration, the network access provider server forwarding the response to the requester

when the status code is not actionable, the network access provider server forwarding the response to the requester

the network access provider server evaluating whether the response includes a modification history

when the response includes the modification history,

the network access provider server computing a time-to-live for the response based on an age factor, a current time and a value of the modification history,

the network access provider server computing the computed expiration based on the current time and the time-to-live

when the response does not include the modification history, the network access provider server retrieving a modification query value from the request history data based on a response type and a response location

when the modification query value is retrieved,

the network access provider server computing the time-to-live for the response based on an age factor, a current time and the modification query value,

the network access provider server computing the computed expiration based on the current time and the time-to-live;

when the retrieving the modification query value is not successful, the network access provider server forwarding the response to the requester.

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16. (Previously Presented) The method of claim 15 wherein the network access provider server evaluating whether the response has a status code that is actionable comprises the network access provider server checking to determine whether the response has a hyper-text transfer protocol (HTTP) status code of "OK" or "Not Modified".

17. (Cancelled)

18. (Currently Amended) A method for increasing the throughput of network communications performed by a network access provider server, the method comprising:

- the network access provider server establishing a connection with a client computer

- the network access provider server receiving a request for a requested object from a requester, wherein the requester is a web browser on the client computer

- the network access provider server forwarding the request to a server

- the network access provider server receiving a response from the server

- the network access provider server reviewing the response to determine whether the response includes a native expiration

- when the response does not include the native expiration



the network access provider server evaluating whether a content type of the response is appropriate

when the content type of the response is appropriate

the network access provider server computing a calculated expiration for the response

the network access provider server inserting the calculated expiration into the response creating an amended response

the network access provider server forwarding the amended response to the requester, wherein the amended response includes the requested object

the network access provider server storing the amended response

the network access provider server providing the amended response to other requesters on other client computers that request the requested object, the providing achieved without additional communication with the server when the content type of the response is not appropriate,

the network access provider server forwarding the response to the requester

when the response includes the native expiration, the network access provider server forwarding the response to the requester

the network access provider server evaluating whether the response includes a modification history

when the response includes the modification history,

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the network access provider server computing a time-to-live for the response based on an age factor, a current time and a value of the modification history,

the network access provider server computing the computed expiration based on the current time and the time-to-live

when the response does not include the modification history, the network access provider server retrieving a modification query value from the request history data based on a response type and a response location

when the modification query value is retrieved,

the network access provider server computing the time-to-live for the response based on an age factor, a current time and the modification query value,

the network access provider server computing the computed expiration based on the current time and the time-to-live;

when the retrieving the modification query value is not successful, the network access provider server forwarding the response to the requester.

19. (Previously Presented) The method of claim 18 wherein the network access provider server evaluating whether a content type of the response is appropriate comprises the network access provider server checking to determine whether the content type is a graphic image.

20. (Previously Presented) The method of claim 19 wherein the network access

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provider server evaluating whether a content type of the response is appropriate comprises the network access provider server checking to determine whether the content type is one of a Graphics Interchange Format (GIF) file or Joint Photographic Experts Group (JPEG) file.

21. (Previously Presented) The method of claim 18 wherein the network access provider server evaluating whether a content type of the response is appropriate comprises the network access provider server checking to determine whether the content type is in an appropriate type list.

22. (Previously Presented) The method of claim 21 wherein the appropriate type list comprises at least one of graphic, JavaScript, Cascading Style Sheet, portable document format (PDF), audio, video, and multimedia.

23. (Previously Presented) The method of claim 18 wherein the calculated expiration is based on at least one of a response content type and a response resource identifier.

24. (Previously Presented) The method of claim 18 wherein the calculated expiration is based on a time-to- live.

25. (Cancelled)

26. (Previously Presented) The method of claim 18 wherein the network access provider server receiving a request comprises the network access provider server storing request information as request history data.

27. (Previously Presented) The method of claim 26 wherein the request information includes a request resource identifier, a request content type, and a modification query when the modification query is present.

28.(Cancelled)

29. (Currently Amended) The method of claim ~~28~~ 26 further comprising:  
when the time-to-live is greater than a defined maximum, the network access provider server setting the time-to-live to be the defined maximum; when the time-to-live is less than a defined minimum, the network access provider server forwarding the response to the requester.

30. (Currently Amended) The method of claim ~~28~~ 26 wherein the request is a hyper-text transfer protocol (HTTP) get, the modification query value is an HTTP if-modified-since value, and the modification history value is an HTTP last-modified value.

31. (Currently Amended) A storage medium having instructions stored thereon which

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when executed by a processor cause a network access provider server to perform operations comprising:

- the network access provider server establishing a connection with a client computer

- the network access provider server receiving a request for a requested object from a requester, wherein the requester is a web browser on the client computer

- the network access provider server forwarding the request to a server

- the network access provider server receiving a response from the server

- the network access provider server reviewing the response to determine whether the response includes a native expiration

- when the response does not include the native expiration

- the network access provider server computing a computed expiration for the response

- the network access provider server inserting the computed expiration into the response creating an amended response

- the network access provider server forwarding the amended response to the requester, wherein the amended response includes the requested object

- the network access provider server storing the amended response

- the network access provider server providing the amended response to other requesters on other client computers that request the requested object, the providing achieved without additional communication with the server-

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the network access provider server evaluating whether the response includes a modification history

when the response includes the modification history,

the network access provider server computing a time-to-live for the response based on an age factor, a current time and a value of the modification history,

the network access provider server computing the computed expiration based on the current time and the time-to-live

when the response does not include the modification history, the network access provider server retrieving a modification query value from the request history data based on a response type and a response location

when the modification query value is retrieved,

the network access provider server computing the time-to-live for the response based on an age factor, a current time and the modification query value,

the network access provider server computing the computed expiration based on the current time and the time-to-live;

when the retrieving the modification query value is not successful, the network access provider server forwarding the response to the requester.

32. (Previously Presented) The storage medium of claim 31 wherein the server comprises an origin server.

33. (Currently Amended) The storage medium of claim 31 having further instructions stored thereon which when executed by the processor cause the network access provider server to perform further operations comprising: the network access provider server evaluating whether a content type of the response is appropriate; the network access provider server performing the reviewing only when the content type of the response is appropriate.

34. (Previously Presented) The storage medium of claim 33 wherein the network access provider server evaluating whether a content type of the response is appropriate comprises the network access provider server checking to determine whether the content type is in an appropriate type list.

35. (Previously Presented) The storage medium of claim 34 wherein the appropriate type list comprises at least one of graphic, JavaScript, Cascading Style Sheet, portable document format (PDF), audio, video, and multimedia.

36. (Cancelled)

37. (Previously Presented) The storage medium of claim 31 wherein when the response includes the native expiration, the network access provider server forwarding the response to the requester.

38. (Previously Presented) The storage medium of claim 31 wherein the computed expiration is based on at least one of a response content type and a response resource identifier.

39. (Previously Presented) The storage medium of claim 31 wherein the computed expiration is based on a time-to-live.

40. (Previously Presented) The storage medium of claim 31 wherein the network access provider server receiving a request comprises the network access provider server storing request information as request history data.

41. (Previously Presented) The storage medium of claim 40 wherein the request information includes a request resource identifier, a request content type, and a modification query when the modification query is present.

42. (Cancelled)



43. (Currently Amended) The storage medium of claim ~~42~~ 40 having further instructions stored thereon which when executed by the processor cause the network access provider server to perform operations further comprising: when the time-to-live is greater than a defined maximum, the network access provider server setting the time-to-live to be the defined maximum; when the time-to-live is less than a defined minimum, the network access provider server forwarding the response to the requester.

44. (Previously Presented) The storage medium of claim 43 wherein the request is a hyper-text transfer protocol (HTTP) get, the modification query value is an HTTP if-modified-since value, and the modification history value is an HTTP last-modified value.

45. (Currently Amended) A network access provider server configured to accelerate network traffic delivery, the network access provider server comprising:

- a processor

- a memory coupled with the processor

- a storage medium having instructions stored thereon which when executed cause the network access provider server to perform actions comprising
  - the network access provider server establishing a connection with a client computer

receiving a request for a requested object from a requester, wherein the requester is a web browser on the client computer

forwarding the request to a server

receiving a response from the server

reviewing the response to determine whether the response includes a native expiration

when the response does not include the native expiration

computing a computed expiration for the response

inserting the computed expiration into the response creating an amended response

forwarding the amended response to the requester, wherein the amended response includes the requested object

storing the amended response

providing the amended response to other requesters on other client computers that request the requested object, the providing achieved without additional communication with the server

evaluating whether the response includes a modification history

when the response includes the modification history,

computing a time-to-live for the response based on an age factor, a current time and a value of the modification history,

computing the computed expiration based on the current time and the time-to-live

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when the response does not include the modification history,  
retrieving a modification query value from the request history data based  
on a response type and a response location  
when the modification query value is retrieved,  
computing the time-to-live for the response based on an age  
factor, a current time and the modification query value,  
computing the computed expiration based on the current time and  
the time-to-live;  
when the retrieving the modification query value is not successful, the network  
access provider server forwarding the response to the requester.

46. (Previously Presented) The network access provider server of claim 45 wherein the server comprises an origin server.

47. (Currently Amended) The network access provider server of claim 45 having further instructions which when executed cause the processor to perform further operations comprising: evaluating whether a content type of the response is appropriate;  
performing the reviewing only when the content type of the response is appropriate.

48. (Previously Presented) The network access provider server of claim 47 wherein the

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evaluating whether a content type of the response is appropriate comprises checking to determine whether the content type is in an appropriate type list.

49. (Previously Presented) The network access provider server of claim 48 wherein the appropriate type list comprises at least one of graphic, JavaScript, Cascading Style Sheet, portable document format (PDF), audio, video, and multimedia.

50. (Cancelled)

51. (Previously Presented) The network access provider server of claim 45 wherein when the response includes the native expiration, forwarding the response to the requester.

52. (Previously Presented) The network access provider server of claim 45 wherein the computed expiration is based on at least one of a response content type and a response resource identifier.

53. (Previously Presented) The network access provider server of claim 45 wherein the computed expiration is based on a time-to-live.

54. (Previously Presented) The network access provider server of claim 45 wherein the receiving a request comprises storing request information as request history data.

55. (Previously Presented) The network access provider server of claim 54 wherein the request information includes a request resource identifier, a request content type, and a modification query when the modification query is present.

56. (Cancelled)

57. (Currently Amended) The network access provider server of claim ~~56~~ 54 wherein the storage medium has further instructions stored thereon which when executed cause the computing device to perform further operations comprising: when the time-to-live is greater than a defined maximum, setting the time-to-live to be the defined maximum; when the time-to-live is less than a defined minimum, forwarding the response to the requester.

58. (Previously Presented) The network access provider server of claim 57 wherein the request is a hyper-text transfer protocol (HTTP) get, the modification query value is an HTTP if- modified-since value, and the modification history value is an HTTP last modified value.

### ***Reasons for Allowance***

The following is an examiner's statement of reasons for allowance:

The prior art does not explicitly teach,

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A method for increasing the throughput of network communications performed by a network access provider server, the method comprising:

- the network access provider server establishing a connection with a client computer

- the network access provider server receiving a request for a requested object from a requester, wherein the requester is a web browser on the client computer

- the network access provider server forwarding the request to a server

- the network access provider server receiving a response from the server

- the network access provider server reviewing the response to determine whether the response includes a native expiration

- when the response does not include the native expiration

- the network access provider server computing a computed expiration for the response

- the network access provider server inserting the computed expiration into the response creating an amended response

- the network access provider server forwarding the amended response to the requester, wherein the amended response includes the requested object
- storing the amended response

- the network access provider server providing the amended response to other requesters at other client computers that request the requested object, the providing achieved without additional communication with the server

the network access provider server evaluating whether the response includes a modification history

when the response includes the modification history,

the network access provider server computing a time-to-live for the response based on an age factor, a current time and a value of the modification history,

the network access provider server computing the computed expiration based on the current time and the time-to-live

when the response does not include the modification history, the network access provider server retrieving a modification query value from the request history data based on a response type and a response location

when the modification query value is retrieved,

the network access provider server computing the time-to-live for the response based on an age factor, a current time and the modification query value,

the network access provider server computing the computed expiration based on the current time and the time-to-live;

when the retrieving the modification query value is not successful, the network access provider server forwarding the response to the requester.

In particular, the network access provider, as defined in the specification, para.0011, an ISP to perform the totality of the claimed limitations, of determination of a native expiration, computing the native expiration to create an amended response, in which the response is also evaluated to determine whether there is a history of modification and

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computing TTL based on age factor, current time, and value of the modification history, and when there is not a modification history, retrieving a modification query value from request history data based on a response type and response location and then computing TTL based on age factor, current time and modification query value, See also Remarks filed on 07/09/09 and 11/04/09.

**NOTE:** The storage medium of independent claim 31 and all dependent claims is deemed to be statutory, based upon the applicant's specification para. 0018, 0038, e.g. storage media such as hard disk, floppy disk, CD, DVD, harddrive.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

/John Follansbee/

Supervisory Patent Examiner, Art Unit 2451